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EXAMINER

PIERCE, JEREMY R

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 040325

Application Number: 09/746,560
Filing Date: December 26, 2000
Appellant(s): JOHANSEN, FRIDTJOV

Sheridan Neimark
For Appellant

MAILED
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GROUP 1700

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 28, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because Appellant states that claims 26, 28, 30, 31, and 32 should be considered separately. The Examiner has found arguments as to why claim 26 should not stand or fall with the other claims on page 26 of the Appeal Brief. However, Appellant's arguments do not explain why claims 28, 30, 31, and 32 are believed to be separately patentable. For claims 28, 30, 31, and 32, Appellant merely

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point out differences in what the claims cover and does not argue as to why the claims are separately patentable (see pages 21-22 of the Appeal Brief).

Therefore, the Examiner agrees that claim 29 should be considered separately. The Examiner also agrees that claim 26 should be considered separately. However, the Examiner disagrees with Appellant regarding the rest of the groupings, as it is believed that claims 25, 28, and 30 should all be considered together, since Appellant has not argued why the claims are separately patentable. Also, claims 26, 27, 31, and 32 should be considered together since Appellant has not argued why the claims are separately patentable, and claims 27, 31, and 32 depend from claim 26.

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

US 4,418,031	Doerer et al.	11-1983
US 4,101,335	Barrable	7-1978
US 5,047,453	Vöst et al.	9-1991

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

A. Claims 25-28 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doerer et al. (U.S. Patent No. 4,418,031) in view of Barrable (U.S. Patent No. 4,101,335).

Doerer et al. disclose an insulating material comprising base and carrier fibers (column 2, lines 43-67). The carrier fibers are melted through heating to bind the base

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fibers into a molded form (column 6, lines 22-28). Doerer et al. disclose polyester fibers may be used as the melting carrier fiber (column 4, lines 6-7). Doerer et al. also disclose the addition of shoddy material in order to decrease the cost of insulation (column 7, lines 23-26). The base fibers may be any suitable cellulosic material, such as wood, paper, cotton, jute, or any other suitable natural fiber (column 2, lines 51-54). However, Doerer et al. fail to teach the cellulosic fibers may be flax. Still, flax fibers are a known type of cellulosic fiber recognized in the insulation art as equivalents to the cellulosic fibers disclosed by Doerer et al. Barrable teaches flax to be a useful fibrous cellulosic material in insulation, along with wood, jute, or cotton (column 2, lines 20-26). It would have been obvious to one having ordinary skill in the art to use flax fibers as the base fibers in Doerer et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. Express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious. With regard to claims 26, 31, and 32, Doerer et al. is silent on the limitations of melting point and dtex size of the polyester fiber. However, selection of a polyester fiber having a particular melting point and fiber size would be necessary and therefore obvious to a skilled artisan predicated on the processing parameters used in manufacturing the insulation material. The melting point of the polyester would be a result effective variable that can be adjusted to optimize the desired processing temperature of the material and using polyester fibers with a smaller dtex would allow the adhesive to be more uniformly spread throughout the fibrous matrix after the fibers were melted. Absent a showing of unexpected results using the

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claimed ranges, the claimed melting point ranges and fiber sizes would obviously, since it has been held that discovering optimum values of result effective variables involves only routine skill in the art. With regard to claims 27, 31, and 32, Doerer et al. disclose the carrier fibers comprise between 2 and 30% by weight of the mat (column 4, lines 55-57). With regard to claims 28, 31, and 32, Doerer et al. disclose the base fibers, or cellulosic fibers comprise between 70 and 95% by weight of the mat and fail to disclose the range to be within 5-50% by weight (claim 28), 15-40% by weight (claim 32) or 20-30% by weight (claim 32). However, lowering the amount of cellulosic fibers in favor of increasing the amount of shoddy would be an obvious modification to a person having ordinary skill in the art, motivated by a decrease in cost, since reclaimed fabric sources are cheaper than new cellulosic fibers. It would have been obvious to one having ordinary skill in the art to lower the amount of base fibers used by Doerer et al. and increase the amount of shoddy fibers, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. The Examiner also notes that using shoddy fibers does not necessarily have to change the chemical make-up of the mat (i.e. the recited percentage of 70 to 95% cellulosic fiber need not be disturbed). Shoddy is known in the art to mean re-used. The increase in shoddy material does not have to interfere with amount of cellulosic fibers present in Doerer et al., since shoddy material may consist only of cellulosic materials to begin with. Although the percentage of cellulosic fibers (i.e. flax) is being lowered by such an obvious modification, it is being substituted with other reclaimable cellulosic fibers. With regard to claim 30, it would be obvious to a person having ordinary skill in the art to form

the insulation material into the claimed dimensions to create an insulation mat with a desired size for its intended use. With regard to claim 32, Doerer et al. do not disclose a heat conductivity measurement, however, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. polyester fibers, shoddy fibers, and cellulosic fibers) and in the similar production steps (i.e. melting the polyester fibers to bind cellulosic fibers in a mold) used to produce the insulation mat. The burden is upon the Appellant to prove otherwise. In the alternative, it would have been obvious to one having ordinary skill in the art to optimize the heat conductivity in adjusting the manufacturing steps in order to create a material with better insulation properties.

B. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doerer et al. in view of Barrable as applied to claims 25 and 27 above, and further in view of Vöst et al. (U.S. Patent No. 5,047,453).

Doerer et al. and Barrable do not teach implementing recycled cardboard and/or wastepaper into the shoddy. Vöst et al. teach that shredded waste paper is used in shoddy to make insulation material (column 2, lines 47-48). It would have been obvious to one having ordinary skill in the art to use wastepaper in the shoddy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. Express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious.

(11) Response to Argument

Appellant argues the mats or panels according to Doerer, Barrable, and Vöst are all of substantial density, i.e. compressed, and not aerated. Appellant supports this argument by pointing to various examples in the Barrable and Vöst references, but not the Doerer reference. In response, the Examiner initially points out that density is not a claimed feature of Appellant's invention. Nor is Density mentioned in the specification of the present invention. The Examiner cannot give patentable weight to the density of Appellant's invention because it is not disclosed. Furthermore, Appellant claims that the fibrous material is molded immediately after aeration. Molding the fibrous material would remove the aerated nature of the fibrous mat. Appellant has not claimed any degree of aeration, molding steps, or resulting density that would differentiate the present invention from the Doerer reference in view of Barrable and Vöst.

Appellant argues that Doerer, although disclosing a comprehensive basket or shotgun disclosure of base fibers, fails to mention flax. However, as set forth above, flax fibers are a known type of cellulosic fiber recognized in the insulation art as equivalents to the cellulosic fibers disclosed by Doerer et al. Express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious.

Appellant argues that Doerer is silent on the formation of an aerated homogeneous mass. However, Doerer discloses a dry process to form the flexible mat (column 2, lines 43-48). A dry process is in contrast to a wet process because the fibers are exposed to air instead of liquid.

Appellant argues the Doerer process inherently produces a compressed mat or panel, and asserts that the molding pressures used by Doerer will inevitably squeeze out any air which might have been left. However, Appellant's claims, similar to Doerer, recite a molding step after aeration. This molding step would also squeeze out air from a fibrous material. As stated above, Appellant has not claimed any degree of aeration, molding steps, or resulting density that would differentiate the present invention from the Doerer reference in view of Barrable and Vöst.

Appellant argues that Doerer is silent on the mixed fibers being formed into an aerated homogeneous mass. Again, forming a mat in a dry process exposes the fibers to air. Additionally, Appellant does not provide any kind of density values to support the aerated nature of the claimed fibrous product. Also, Appellant claims the fibrous product is molded and heat-treated after it is heated, which removes the air from the fibrous material. Appellant does not supply one skilled in the art with the aeration that is left in the fibrous mat after this step.

Appellant argues that Barrable relates to a highly dense mat of inorganic materials that is not aerated. Appellant also argues that using polyester fibers as a binder in Barrable would be to fly in the face of Barrable. However, Barrable was not used in the rejection for any of the reasons purported by Appellant. As stated above, Barrable is used to show flax fibers as equivalent cellulosic fibers to the cellulosic fibers disclosed by Doerer. The Doerer reference is not used to modify the Barrable reference.

Appellant argues that one of ordinary skill in the art would not consider using Barrable in conjunction with Doerer because Barrable teaches forming the mat using a wet process, and Doerer criticizes formation with a wet process. Despite the different processes used by Doerer and Barrable to form an insulation mat, a person of ordinary skill in the art would recognize that substitution of a known type of cellulosic fiber taught by Barrable for the cellulosic fiber taught by Doerer is an obvious modification, as set forth above in the rejection. The references were not combined to show any processing steps to manufacture the mat.

Appellant argues that there is no advantage disclosed in the prior art for the use of flax in place of less expensive fibers. Although there is nothing on the record to indicate actual cost of flax fibers compared to other cellulosic fibers, the fibers are recognized as equivalents in the art for providing a cellulosic fiber in insulation mats. Express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious.

Appellant argues that Doerer, Barrable, and Vöst are all concerned with making pressed and therefore relatively dense shapes, not insulation for buildings. However, Doerer (column 2, lines 66-67), Barrable (column 2, line 8-9), and Vöst (column 2, lines 55-56) all disclose using their invention for insulation mats. Additionally, as set forth above, the density of Appellant's invention is neither set forth in the claims, nor discussed in the specification.

Appellant asserts that the present invention is obtained by aerating a homogeneous fiber mixture that is mostly air, and thus has very low density. Again,

Appellant's assertion that the mat is "mostly air" is not supported by the claims, and neither is the recitation of a very low density.

Appellant argues that flax is not equivalent. However, the Examiner is not asserting that the flax is equivalent to the polyester or recycled shoddy fibers present in the mat. The Examiner is asserting that the flax cellulosic fiber is equivalent to the cellulosic fibers disclosed by Doerer.

Appellant argues that the present invention requires certain proportions that are not a matter of routine experimentation because Doerer and Barrable desire to make denser products. However, density is not a claimed feature of the present invention. Additionally, Doerer discloses that density is a property that can be varied in the mat (column 2, lines 57-67). A number of products that do not all have a rigid density, such as headliners, trim panels, furniture, luggage, building material, packaging, and automotive components can be made from Doerer (column 2, lines 57-67). Appellant's assertion that Doerer is limited to dense products seems contrary to the teachings of Doerer, such as the teachings of varying the density of the fibrous mat and using the fibrous mat in products known to have lower densities. Also, the Examiner has set forth reasoning not related to density that a person skilled in the art would use in substituting shoddy in the various portions for the cellulosic fiber. Shoddy can be formed of cellulosic materials itself. So, removing pure cellulosic fibers for shoddy would not actually change the chemical make-up of the insulation, but would only substitute a cheaper reclaimable source for pure cellulosic fibers.

Appellant argues Barrable and Vöst include binders. However, these features were not used in the rejection. Barrable was only used to show the feature of flax fibers a type of cellulosic fiber usable in Doerer. Vöst was only used to show the inclusion of shredded waste paper into the shoddy. Doerer, like Appellant, uses polyester fibers to bind the material.

Appellant argues the prior art does not teach the aerated nature of the admixture of fibrous materials. As set forth above, the Doerer reference teaches using a dry process to make the mat. Additionally, Appellant molds the mat after aerating. Appellant has not claimed any degree of aeration, molding steps, or resulting density that would differentiate the present invention from the Doerer reference in view of Barrable and Vöst.

Appellant argues that density is far too heavy of the mats from Barrable and Doerer. However, density is not present in the claims.

Appellant argues that the substitution of flax fibers in the rejection is based on the assumption that it is proper to combine diverse elements from different references merely because these elements are known. However, Barrable teaches flax fibers are a type of cellulosic fibers that are used in insulation material. Doerer teaches using cellulosic fibers in an insulation material. Therefore, using flax fibers in Doerer would be obvious, since express suggestion to substitute one equivalent for another need not be present to render such substitutions obvious.

Appellant argues that it is not proper to presume the melting point and size of the polyester fibers is inherent to the Doerer reference. The Examiner agrees with this argument, and withdraws this portion of the rejection.

Appellant argues that it would not be obvious to use the claimed melting point and size of the polyester fibers, and no evidence is presented as to such alleged obviousness. However, selection of polyester with a certain melting point and fiber size would be necessary, and therefore obvious to a person skilled in the art predicated on the processing parameters used in manufacturing the insulation material. Appellant's claimed ranges of melting point and fiber size for the polyester are not unique in the art. Use of the claimed polyester fibers would be obvious to provide a desired processing temperature and distribution of binder in the fibrous mat, absent any unexpected results using the claimed values, as set forth above in the rejection.

Appellant argues that Doerer and Barrable are vastly different from one another. However, both are related to fibrous insulation mats as set forth above.

Appellant argues that Doerer does not teach aerating the fibrous mat. However, to aerate is to supply with air. Doerer makes the mat using a dry process. In a dry process, the mat is exposed to air, and not liquid. Additionally, Appellant claims that the mat is molded after aeration, which removes air from a mat.

Appellant argues that the Examiner is not considering the references as a whole because Doerer discloses a dry process and Barrable discloses a wet process. However, the Examiner considered the references for everything they taught. The teaching that flax fiber is a type of cellulosic fiber that is used in insulation mats from

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Barrable is combinable with the Doerer reference, which discloses using cellulosic fiber in insulation mats. The different processing steps used in the references does not render the references outside their respective scopes as insulation materials formed from fibrous mats, both containing cellulosic fibers. Therefore, the teaching of flax fibers in Barrable is combinable with the Doerer reference.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Jeremy R. Pierce
Examiner
Art Unit 1771

March 29, 2004

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